

## REMARKS

A first Office Action was mailed in the above case on January 4, 2005, a result of the examination of claims 1-20. In the Office Action, the abstract was objected to as containing claim language. Claims 1-17 were rejected as anticipated by U.S. Patent No. 6,005,377 to *Chen, et al.* Claims 18-20 were rejected as anticipated by U.S. Patent No. 5,705,920 to *Watanabe, et al.* Reconsideration and withdrawal of the objection and rejections are respectfully requested in view of the above amendments and remarks which follow.

A. Objections to the Abstract Addressed.

The Abstract has been amended by removing the more legalistic, claim-like language. Withdrawal of the objection is respectfully requested.

B. Claim Amendments.

Claim 1 has been amended to address an informality only. Claim 18 has been amended to change "value" to "value range", consistent with the same phrase used in claim 1. No new matter has been added to claim 18.

C. Claims 1-17 are Patentably Distinguishable over Chen.

Claims 1-17 stand rejected under 35 U.S.C. § 102(b) as anticipated by *Chen et al* (U.S. Patent No. 6,005,377). This rejection, which is respectfully traversed, is based on the premise that the following limitation:

... there is a non-linear modulation only when the value of a signal on the load is lower or higher than a prefixed value range. is inherent in the normal operation of a pulse width modulation ("PWM") system. This conclusion is traversed as without legally sufficiently basis.

When asserting inherency, the "Examiner must provide [a] rationale or evidence tending to show inherency" (MPEP § 2112, emphasis added).

Indeed,

To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.'

MPEP § 2112; *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999).

Moreover,

In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

*Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

It is submitted that within the normal mode of operation, some PWM systems, particularly DC-to-DC converters as claimed, can and do have a linear mode of operation. In a DC-to-DC converter the duty cycle is normally linearly modulated with an input signal and the gain of the PWM modulator is constant. PWM systems can also have various non-linear aspects as well, depending upon the specific design used and how the signals are modulated.

Thus, the blanket statement or inference that PWM systems operate "such that there is a non-linear modulation only when the value of a signal on the load is lower or higher than a prefixed value range" as claimed, by definition of PWM systems, is incorrect and is respectfully traversed.

The present invention as claimed, includes a control system that modulates in a non-linear manner only when the value of a signal on the load is lower or higher than a prefixed value range as is described in the Specification at page 4, lines 18-30. If the signal on the load is within the prefixed value range, then a linear mode of operation is present. This specific combination of modes of operation is not taught by *Chen*.

The Examiner has not provided technical reasoning sufficient to show how the allegedly inherent characteristics necessarily flow from the teachings of *Chen*. All that is asserted is that the claimed limitation is inherently found in all PWM systems, which is also without a factual basis for support. The mere assertion that the claimed limitation is found in PWM systems is not sufficient to sustain the rejection under 35 USC 102(b) based upon *Chen*.

For the above reasons, claim 1 remains patentably distinguishable over *Chen*, and is therefore believed allowable. Claims 2-17 are also believed allowable as depending from allowable base claim 1.

D. Claims 18-20 are Patentably Distinguishable over Watanabe.

Claims 18-20 stand rejected under 35 U.S.C. § 102(b) as being fully anticipated by *Watanabe et al* (U.S. Patent No. 5,705,920). This rejection is also respectfully traversed.

Claim 18 also includes the following limitation:

. . . there is a non-linear modulation only when the value of a signal on the load is lower or higher than a prefixed value range.

This bona fide claim limitation was asserted by the Examiner as inherent in the normal operation of a pulse width modulation ("PWM") system and thus presumably inherently taught by *Watanabe*. This conclusion of inherency is again respectfully traversed for the reasons given above with respect to the *Chen* rejection.

The Examiner has not shown where or if the above-described claimed mode of operation is found specifically in *Watanabe*, other than the assertion that the claimed limitation is inherently found in all PWM systems ("this is how pwm work[s]"). Applicants would respectfully request that the Examiner point out specifically in the *Watanabe* reference where the claimed combination of modes of operation is to be found, as required. The mere assertion that the claimed limitation is found in PWM systems by definition is without support and thus not sufficient to sustain the present rejection based on *Watanabe*.

For this reason, claim 18 is believed patentably distinguishable over *Watanabe*. Claims 19 and 20 are likewise believed allowable as depending from allowable base claim 18 for the reasons given above.

E. Conclusion.

The application is now believed to be in form for allowance, and such action is respectfully requested. Although no fees are believed due for this filing, the Office is authorized to charge any fee associated with this filing to Deposit Account No. 50-1123.

Please contact the undersigned by telephone should any issues remain.

Respectfully submitted,



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